Volunteer Lake Assessment Program Individual Lake Reports

DUTCHMAN POND, SPRINGFIELD, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	114	**Max. Depth (m):**	3	**Flushing Rate (yr^{-1})**	1.4
Surface Area (Ac.):	28	**Mean Depth (m):**	1.9	**P Retention Coef:**	0.79
Shore Length (m):	1,400	**Volume (m^3):**	210,000	**Elevation (ft):**	1543

TROPHIC CLASSIFICATION

Year	Trophic class
1984	OLIGOTROPHIC
2003	OLIGOTROPHIC

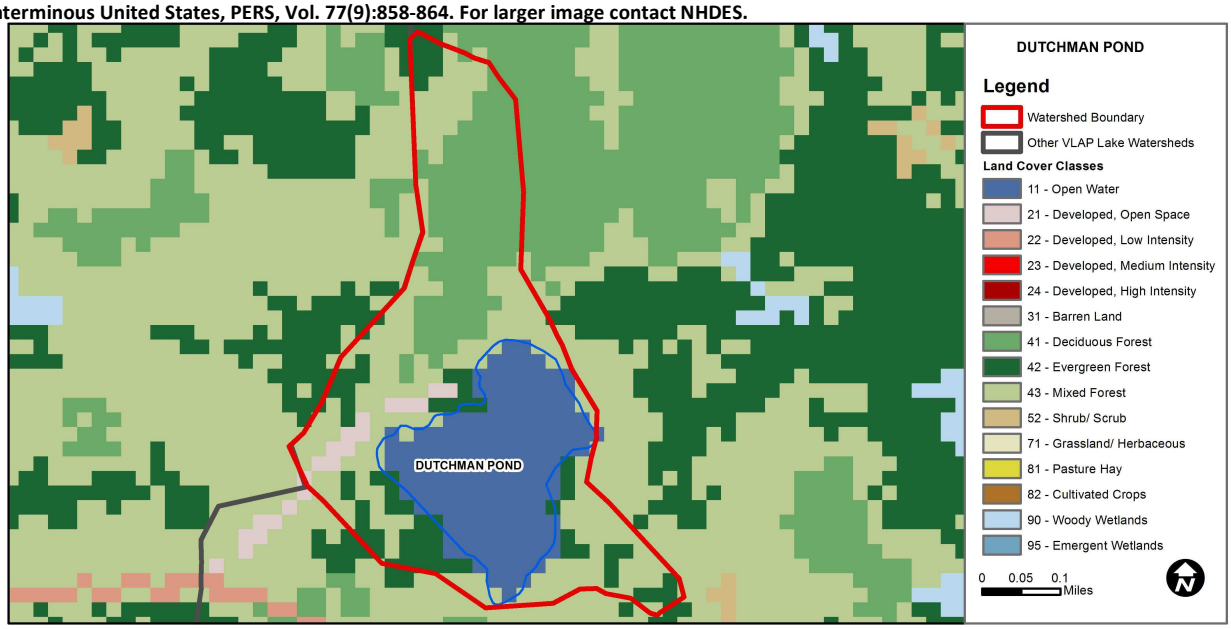
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Cautionary	<5 samples and median is > threshold. More data needed.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Very Good	>5 samples and median is < 1/2 threshold.
Primary Contact Recreation	E. coli	Good	Geometric means < criteria; however at least 1 exceedance of the single sample criteria occurred.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.

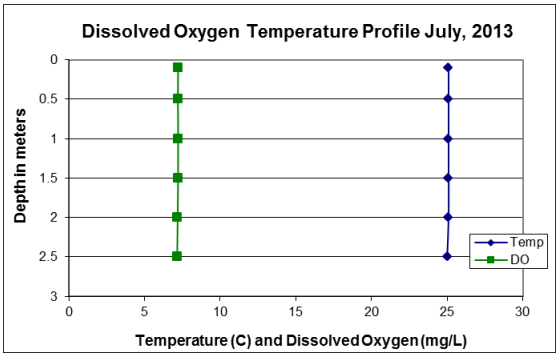


Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	28.6	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	2.9	Deciduous Forest	19.06	Pasture Hay	0
Developed-Low Intensity	0	Evergreen Forest	14.29	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	36.66	Woody Wetlands	0
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
DUTCHMAN POND, SPRINGFIELD, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **CHLOROPHYLL-A:** Chlorophyll levels increased from 2012 but remained below the state median. Historical trend analysis indicates relatively stable chlorophyll with high variability between years.
- **CONDUCTIVITY/CHLORIDE:** Conductivity levels remained very low in the pond and were much less than the state median. Historical trend analysis indicates relatively stable epilimnetic conductivity with high variability between years.
- **TOTAL PHOSPHORUS:** Phosphorus remained low in 2013 after a spike in 2010. Historical trend analysis indicates relatively stable epilimnetic phosphorus with high variability between years.
- **TRANSPARENCY:** Transparency remained high in 2013 as the Secchi disk was visible on the pond bottom. Historical trend analysis indicates stable transparency with low variability between years.
- **TURBIDITY:** Turbidity was low in 2013.
- **PH:** pH was less than the desirable threshold of 6.5 – 8.0 units. Historical trend analysis indicates relatively stable epilimnetic pH with high variability between years.
- **DISSOLVED OXYGEN:** Dissolved oxygen levels were high throughout the water column and sufficient to support aquatic life.
- **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer (June, July and August) to better assess seasonal and annual trends and decrease variability of the data



Station Name	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	Total P ug/l	Trans. m	Turb. ntu	pH
					NVS		
Epilimnion	2.20	3.91	15.7	9	3.00	0.50	6.33

Table 1. 2013 Average Water Quality Data for DUTCHMAN POND

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable	Trend not significant; data highly variable.	Chlorophyll-a	Stable	Trend not significant; data highly variable.
Conductivity	Stable	Trend not significant; data highly variable.	Transparency	Stable	Trend not significant; data show low variability.
			Phosphorus (epilimnion)	Stable	Trend not significant; data highly variable.